

REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

Claim 1 has been amended to recite that the feed mechanism is adjusted “in an identical state for all of plural printing mechanism types of printing media designed to be used in the printing device” so that an average feed error is in the vicinity of zero with respect to a printing medium “having the smallest value for the average feed error.” Parallel amendments have been made to method Claim 15. Basis for this amendment is found at page 10, line 17 through page 12, line 23, and in Figs. 8A – 9B.

The claimed invention is directed to a problem whereby a printing medium being advanced in the sub-feed direction can slip by a certain amount, particularly for printing media having slippery surfaces. Claims 1 and 15 recite a feature whereby the feed amount is set in the same way for all types of print media, such that an average feed error is in the vicinity of zero for a printing medium having the smallest value for the average feed error. Since the feed amount is set in the same way for all types of print media, the feed error for other print media (other than that having the smallest average feed error) will be positive to produce light banding. However dark banding, which is more noticeable than light banding, is thereby eliminated (see page 11, lines 22-27). Since light banding is less noticeable than dark banding, the feed error for the other print media is tolerable. This results in acceptable image quality, coupled with a simplified control which does not require different feed amounts based on the surface characteristics of the print medium.

Claims 1, 8, 9, 15, 22 and 23 are newly rejected under 35 U.S.C. § 102 as being anticipated by Imai. According to the Office Action, the paragraphs bridging cols. 8-9 of Imai disclose adjusting a feed mechanism such that an average feed error is zero with respect to the most slippery printing medium.

This rejection is respectfully traversed since Imai discloses conventional prior art in which it is necessary to control the feed amount differently in dependence on the surface characteristics of the print medium.

Referring to FIG. 11, specific cases are explained based on a case where a plain paper is used. Firstly, when an envelope, which is folded and therefore less even on the surface than plain paper and susceptible to a carriage return failure, is used, the feeding amount per carriage return is set to be 0.5 mm and smaller than when plain paper is used. When OHP sheet which is slippery on the surface and extremely hard to feed is used, the feeding amount per carriage return is set to be 0.25 mm and much smaller than when plain paper is used. When tracing paper which is thinner and less rigid than plain paper and hard to feed is used, the feeding amount per carriage return is set to be 0.5 mm and smaller than when plain paper is used. With this arrangement since the paper feeding amount is adjusted according to the type of recording paper 3 to be used, whichever type of recording paper 3 is used, no variations in paper feed are produced in each recording paper type. (Imai, col. 8, line 56 through col. 9, line 5).

This description is equivocal and contradictory. For example, it says “when OHP sheet which is slippery on the surface and extremely hard to feed is used, the feeding amount per carriage return is set to be 0.25 mm and much smaller than when plain paper is used.”

Fig. 11 shows that when plain paper is used, the feed amount per carriage return is set to be 1.0 mm. It does not make sense that the more slippery OHP sheet is fed with smaller amount than plain paper so that no variations in paper feed are produced in each recording paper type.

More significantly, Imai does not teach or suggest that the feed mechanism is identically adjusted for all printing media, so that an average feed error is in the vicinity of zero with respect to a printing medium having the smallest value for the average feed error. Instead, Imai teaches that the feed mechanism is adjusted to be *different* for each type of printing medium so that feed variations for all types of print media are eliminated (col. 8, lines 42-45). This requires a complex control and is inconsistent with the presently claimed invention.

Claim 8 has been amended to recite that a feed amount correction value is set “to be zero for the first printing medium having the largest value for the average feed error and ... to be non-zero for a second printing medium having the smallest value for the average feed error such that the average feed error  $\delta_{ave}$  corrected by the feed amount correction value is in the vicinity of zero with respect to both the first and second printing media.” Parallel amendments have been made to method Claim 22. Basis for this amendment is found at page 12, line 25 through page 13, line 18, and in Figs. 11A – 12B. That is, according to this feature, by providing a zero feed amount correction value for the first printing medium having the largest value for the average feed error (e.g., plain paper; Fig. 12B), and providing a non-zero feed amount correction value for the second printing medium having the smallest value for the average feed error (e.g., photographic paper; Fig. 12B), the average feed error can be made zero for both types of paper. This is not taught in the noted portion of Imai. That is, although the noted portion of Imai describes that the feed amount for slippery paper is different than for plain paper, it does not teach a zero feed amount correction value for plain paper.

With respect to the rejection of the dependent claims under 35 U.S.C. § 103 as being obvious over Imai in view of JP '863, JP '863 was cited to teach features of the dependent claims and provides no teachings for overcoming the aforementioned shortcomings of Imai. The claims therefore define over any combination of these references.

Applicant therefore believes that the present application is in a condition for allowance and respectfully solicits an early Notice of Allowability.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



---

Gregory J. Maier  
Registration No. 25,599  
Robert T. Pous  
Registration No. 29,099  
Attorneys of Record

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)